

WHAT IS CLAIMED IS:

1. A sound signal recognition system, comprising:

a sound signal input part for receiving a sound signal including
5 either one selected from a voice signal section and a DTMF signal section or
both sections;

a matching part including a voice signal model and a DTMF signal
model, for conducting a matching process of the sound signal inputted from
the sound signal input part by using both the voice signal model and the
10 DTMF signal model for reference; and

a sound signal recognizing part including a language model, for
recognizing the sound signal by using the matching result of the matching
part and the language model,

wherein a sound signal recognition process is conducted with respect
15 to the sound signal including either one selected from the voice signal section
and the DTMF signal section or both sections.

2. A sound signal recognition system according to claim 1, wherein the sound
signal recognizing part selects a better result by comparing the matching
20 result using the voice signal model with the matching result using the DTMF
signal model in the matching part for each segment of a sound signal section
serving as a recognition unit, the sound signal recognition system further
comprising an integrating part for connecting sound signal recognition
results selected by the sound signal recognizing part and integrating them as
25 a total sound signal recognition result with respect to all the sections of the
input sound signal.

3. A sound signal recognition system according to claim 2, wherein the
language model is capable of including a DTMF signal as sound signal
30 recognition vocabulary.

4. A sound signal recognition system according to claim 2, further comprising

a guidance part for providing a user who performs sound signal input via the sound signal input part with guidance on whether a specific vocabulary is to be input as sound signal input by a voice or sound signal input by a DTMF signal.

5

5. A dialog control system including a sound signal recognition system of claim 2, which controls a dialog flow with a user, based on a sound signal recognition result according to the sound signal recognition system.

10 6. A sound signal recognition system according to claim 1, wherein the language model is capable of including a DTMF signal as sound signal recognition vocabulary.

15 7. A sound signal recognition system according to claim 6, further comprising a guidance part for providing a user who performs sound signal input via the sound signal input part with guidance on whether a specific vocabulary is to be input as sound signal input by a voice or sound signal input by a DTMF signal.

20 8. A dialog control system including a sound signal recognition system of claim 6, which controls a dialog flow with a user, based on a sound signal recognition result according to the sound signal recognition system.

25 9. A sound signal recognition system according to claim 1, further comprising a guidance part for providing a user who performs sound signal input via the sound signal input part with guidance on whether a specific vocabulary is to be input as sound signal input by a voice or sound signal input by a DTMF signal.

30 10. A sound signal recognition system according to claim 9, wherein upon detecting that a misidentification rate of a sound signal inputted by a voice for a specific vocabulary is high under predetermined conditions, the

integrating part notifies the guidance part of instruction information for outputting guidance for asking the user to conduct re-input of the sound signal by a DTMF signal for the specific vocabulary.

5 11. A dialog control system including a sound signal recognition system of claim 10, which controls a dialog flow with a user, based on a sound signal recognition result according to the sound signal recognition system.

10 12. A sound signal recognition system according to claim 9, wherein when the integrating part estimates and holds a misidentification rate in the matching result for the sound signal by a voice and a misidentification rate in the matching result for the sound signal by a DTMF signal, and either one of the misidentification rates becomes higher than a predetermined value, the integrating part notifies the guidance part of instruction information for
15 displaying guidance to the user to conduct input by the other sound signal.

20 13. A dialog control system including a sound signal recognition system of claim 12, which controls a dialog flow with a user, based on a sound signal recognition result according to the sound signal recognition system.

14. A sound signal recognition system according to claim 9, wherein the guidance part has a function of notifying a user of correspondence between a DTMF signal and a vocabulary in advance.

25 15. A dialog control system including a sound signal recognition system of claim 14, which controls a dialog flow with a user, based on a sound signal recognition result according to the sound signal recognition system.

30 16. A dialog control system including a sound signal recognition system of claims 9, which controls a dialog flow with a user, based on a sound signal recognition result according to the sound signal recognition system.

17. A dialog control system including a sound signal recognition system of claim 1, which controls a dialog flow with a user, based on a sound signal recognition result according to the sound signal recognition system.

5 18. A sound signal recognition method, comprising:

inputting a sound signal including either one selected from a voice signal section and a DTMF signal section or both sections;

matching the input sound signal by using both a voice signal model and a DTMF signal model;

10 recognizing the sound signal by using the matching result and a language model; and

conducting a sound signal recognition process with respect to the sound signal including either one selected from the voice signal section and the DTMF signal section or both sections.

15

19. A dialog control method including the sound signal recognition method of claim 18, which controls a dialog flow with a user, based on a sound signal recognition result using the sound signal recognition method.

20

20. A sound signal recognition program for executing a sound signal recognition process with respect to an input sound signal including either one selected from a voice signal section and a DTMF signal section or both sections, the program comprising:

25 a sound signal input processing operation of inputting a sound signal including either one selected from a voice signal section and a DTMF signal section or both sections;

a matching processing operation of conducting a matching process of the sound signal inputted in the sound signal input processing operation by using both a voice signal model and a DTMF signal model; and

30

a sound signal recognition processing operation of performing recognition of the sound signal by using a language model based on a matching result in the matching processing operation, the language model

including a word dictionary and grammar.

1008246 02260
20220 94280